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AG885

AG875

AG825

AG815

Product Specifications

Arbitrary Waveform Generator

General (Typical)				
Specifications	AG885	AG875	AG825	AG815
Arbitrary waveform length	2 to 64K (adjustable)			
Ram (Memory)	64K (Optional: Bigger Memory)			
Amplitude resolution	12-bits (with 14-bits optional)			
Sample rate (sine wave)	400 MHz	300 MHz	200 MHz	100 MHz
Sample rate	100 MHz			50 MHz
Sample rate (Arbitrary)	1 MHz to 100 MHz			1 MHz to 50 MHz
Frequency adjustment resolution	10 mHz (with 1 μ Hz optional)			
Standard waveforms	<p>DC, Sine, square, pulse, triangle, rising ramp, falling ramp, noise, rising exponent, falling exponent, sinc, cardiac, gated burst, single burst, log continuous sweep, linear continuous sweep, gated ASK, gated FSK, gated PSK</p> <p>AM (<i>modulating signals; pulse, square, rising ramp, falling ramp, triangle, sinc, cardiac, rising exponent, falling exponent, noise, edited waveforms</i>)</p> <p>FM (<i>modulating signals; pulse, square, rising ramp, falling ramp, triangle, sinc, cardiac, rising exponent, falling exponent, noise, edited waveforms</i>)</p> <p>burst (<i>carrier signals; pulse, square, rising ramp, falling ramp, triangle, sinc, cardiac, rising exponent, falling exponent, noise, edited waveforms</i>)</p>			

<p>Output Amplitude (Frequencies < 5MHz) Open circuit 50 Ω</p> <p>(5MHz > Freq. < 15MHz) Open circuit 50 Ω</p> <p>(15MHz > Freq. < 50MHz) Open circuit 50 Ω</p> <p>(50MHz > Freq. < 100MHz) Open circuit 50 Ω</p> <p>(100MHz > Freq. < 150MHz) Open circuit 50 Ω</p> <p>Accuracy (up to 100 kHz) Adjustment resolution</p>	<p>0 to ±3.5V(7 Vpp) 0 to ±1.75V(3.5 Vpp)</p> <p>0 to ±3.0V(6 Vpp) 0 to ±1.5V(3.0 Vpp)</p> <p>0 to ±2.0V(4 Vpp) 0 to ±1.0V(2.0 Vpp)</p> <p>0 to ±1.5V(3 Vpp) 0 to ±0.75V(1.5 Vpp)</p> <p>0 to ±1.0V(2 Vpp) 0 to ± 0.5V(1.0 Vpp)</p> <p>.1% of the specified output ± 5mV 3 digits (1mv)</p>
<p>Output Offset Open circuit 50 Ω Accuracy Adjustment resolution</p>	<p>0 to ± 2.2V(7 Vpp) 0 to ± 2.2V(3.5 Vpp) 2% ± 5mV (0.1% Optional) 3 digits(1mv)</p>
<p>Output impedance</p>	<p>50 Ω (Optional: 0 to 75 Ω)</p>
<p>Output Current</p>	<p>60 mA (With the standard 50 Ω impedance)</p>
<p>Sync</p>	<p>TTL compatible</p>

Frequencies Ranges

Sine Wave	10 mHz to 150 MHz	10 mHz to 100 MHz	10 mHz to 50 MHz	10 mHz to 10 MHz
Square Pulse Triangle Ramp Sinc Noise (White) Bandwidth AM (Carrier) FM (Carrier) Sweep Burst (Burst Rate) Digital (shift keying rate) Exponent Cardiac	10 mHz to 15 MHz 10 mHz to 15 MHz 10 mHz to 100 KHz 10 mHz to 100 KHz 1 Hz to 5 MHz 25 MHz 1 Hz to 5 MHz 1 Hz to 5 MHz DC to 15 MHz (start & stop frequency) 100 Hz to 2 MHz 1 kHz to 2 MHz 1 Hz to 5 MHz 1 Hz to 1 MHz	10 mHz to 5 MHz 10 mHz to 5 MHz 10 mHz to 100 KHz 10 mHz to 100 KHz 1 Hz to 1 MHz 10 MHz 1 Hz to 1 MHz 1 Hz to 1 MHz DC to 5 MHz 100 Hz to 1 MHz 1 kHz to 1 MHz 1 Hz to 1 MHz 1 Hz to 1 MHz		
Resolution	10 mHz (1 μ Hz optional)			
Accuracy	2% \pm 5mV (.1% optional) At room temperature			
Temp Coefficient	20 ppm/ $^{\circ}$ C			
Aging	10 ppm/yr			

Waveform Characteristics - 50 Ω Termination

<p>Sine Wave Output Flatness</p> <p><1 MHz <10 MHz <150 MHz</p>	<p>0.1 dB 0.5 dB 1 dB</p>	<p>0.1 dB 0.2 dB -</p>
<p>Sine Wave (2Vpp) Adjustment resolution</p> <p>Harmonic Distortion Dc to 100 kHz 100 kHz to 1 MHz 1 MHz to 10 MHz 10 MHz to 50 MHz 50 MHz to 100 MHz 100 MHz to 150 MHz</p> <p>Spurious Dc to 100 kHz 100 kHz to 1 MHz 1 MHz to 10 MHz 10 MHz to 50 MHz 50 MHz to 100 MHz 100 MHz to 150 MHz</p> <p>Noise Dc to 100 kHz 100 kHz to 1 MHz 1 MHz to 10 MHz 10 MHz to 50 MHz 50 MHz to 100 MHz 100 MHz to 150 MHz</p> <p>Phase noise</p>	<p>10 mHz (1 μHz optional)</p> <p>-70 dBc -65 dBc -60 dBc -55 dBc (when applicable) -50 dBc (when applicable) -45 dBc (when applicable)</p> <p>-70 dBc -60 dBc -60 dBc -55 dBc (when applicable) -55 dBc (when applicable) -50 dBc (when applicable)</p> <p>-60 dBc -60 dBc -55 dBc -50 dBc (when applicable) -40 dBc (when applicable) -35 dBc (when applicable)</p> <p>< -60 dBc in a 50 kHz band</p>	
<p>Square Wave (2Vpp) Frequency Adjustment resolution Rise/ Fall time Overshoot Settling time Asymmetry Duty cycle adjustment resolution Jitter</p>	<p>10 mHz - 15 MHz 10 mHz (1 μHz optional) < 4 nS 1% 10 nS to .5% of final value < 2 nS 5% to 95% (1MHz) 10nS < 10pS (rms)</p>	<p>10 mHz - 5 MHz</p>

Triangle, Ramp (2Vpp) Frequency Adjustment resolution Linearity Asymmetry Duty cycle Adjustment resolution Jitter	10 mHz- 15 MHz 10 mHz (1 μ Hz optional) .1% of peak output < 2 nS 5% to 95% 10nS < 10pS (rms)	10 mHz- 5 MHz
Exponential (2Vpp) Frequency Adjustment resolution Rise/ Fall time Damping factor Jitter	10 mHz- 5 MHz 10 mHz (1 μ Hz optional) < 4 nS -1,000 to 1,000 < 10pS (rms)	10 mHz- 1 MHz
Sinc (sin(x)/x) (2Vpp) Frequency Adjustment resolution Zero crossings	10 mHz- 5 MHz 10 mHz (1 μ Hz optional) 2 to 1,000	10 mHz- 1 MHz
Cardiac (2Vpp) Frequency Adjustment resolution Zero crossings	10 mHz- 1 MHz 10 mHz (1 μ Hz optional) 2 to 1,000	
Noise Type Bandwidth	White 50 MHz	White 20 MHz
AM (2Vpp) Carrier (-3dB) Modulating signal Frequency Modulation depth Source	10 mHz to 5 MHz any internal waveform including Arb 10 mHz to 1MHz 0% to 150% internal (external optional)	10 mHz- 1 MHz
External AM modulation	Optional	
FM (2Vpp) Carrier (-3dB) Modulating signal Frequency Modulation depth Source	10 mHz to 5 MHz any internal waveform including Arb 10 mHz to 1 MHz 0% to 100% internal (external optional)	10 mHz- 1 MHz
External FM modulation	Optional	

ASK (2Vpp) Frequency Modulating signal Frequency Gating signal	10 mHz to 5 MHz any internal waveform including Arb 10 mHz to 5 MHz 5 (TTL, CMOS) to 1.2 V (CMOS, TTL, LVTTTL)	10 mHz - 1 MHz 10 mHz - 1 MHz
FSK (2Vpp) Frequency Modulating signal Frequency Gating signal	10 mHz to 5 MHz any internal waveform including Arb 10 mHz to 5 MHz 5 (TTL, CMOS) to 1.2 V (CMOS, TTL, LVTTTL)	10 mHz - 1 MHz 10 mHz - 1 MHz
PSK (2Vpp) Frequency Modulating signal Frequency Gating signal	10 mHz to 5 MHz any internal waveform including Arb 10 mHz to 5 MHz 5 (TTL, CMOS) to 1.2 V (CMOS, TTL, LVTTTL)	10 mHz - 1 MHz 10 mHz - 1 MHz
Burst (2Vpp) Carrier (-3dB) Source Rate Count Gate source Trigger	10 mHz 5 MHz any internal waveform including Arb 100 Hz to 2 MHz variable internal (external optional) single, internal rate, external(optional)	10 mHz - 1 MHz 10 mHz - 1 MHz
Sweep Type Direction Start frequency Stop frequency Sweep time	linear or log (exponential) up or down 0 to 15MHz 0 to 15MHz 1 uS to 1 mS	0 to 1 MHz 0 to 1 MHz 1 uS to 1 mS

Editing Tools

Signal processing	
Math operation	addition, subtraction, multiplication, gain, clip, absolute, resize, invert, mirror, expand to fit
Filtering	smoothing, ideal low pass, first order low pass
Windowing	Gaussians, Blackman, Blackman-Harris, Cosine, Hanning, Hamming, Flat-Top, Kaiser-Bessel, Welch, Triangular
Signal library	sine, square, triangle, falling ramp, rising ramp, rising exponent, falling exponent, sinc, cardiac, noise
GUI Editors	pen, line, manual, insert
Options	save / recall in .txt & .csv format
Units	
Frequency	Hz, kHz, MHz
Amplitude	mVpp, Vpp
Offset	mV, V
Protection	short circuit
Configuration time	
Arbitrary save	10 mS
Arbitrary Recall	100 mS
Setting save	10 mS
Setting Recall	100 mS
Function	100 mS

Physical Properties

Dimensions	128.0 x 77.0 x 31.6 (mm), 5.0 x 3.0 x 1.2 (inches)
Weight	340 grams, 12 Ounces
Other	
PC Requirements Recommended	Operating system: 32/ 64-bit edition of Microsoft Windows XP (SP3), Vista, Windows 7/ Windows 8/ Windows 10 Ports: USB 2.0/ 3.0 compliant port
Environmental Operating environment Temperature range Humidity Storage environment Temperature range Humidity	0 °C to 40 °C for normal operation 15 °C to 32 °C for quoted accuracy 5% to 80% RH, non-condensing -20 °C to +60 °C 5% to 95% RH, non-condensing
Software	Save setting, recall setting, save plot, recall/print plot, zoom in vertical, zoom in horizontal, pen editor, line editor, DSP, variable sampling rate